## Patent Claims

1. Method for determining a measuring point in time ($t_M$), at which a measured value is to be produced by a field device (1) of process automation technology, wherein the field device (1) communicates its measured values at certain communication points in time ($t_K$) via a field bus (5) following a query from a central control unit (10) for measured values of the field device,
characterized in that
the following communication point in time ($t_f$) is at least approximately determined from at least two communication points in time ($t_K$, $t'_K$), and
the measuring point in time ($t_M$) is determined on the basis of the approximately determined communication point in time ($t_f$).

2. Method as claimed in claim 1,
characterized in that
also the measurement point in time ($t_M$) is communicated with the measured value.

3. Method as claimed in claim 1,
characterized in that
the following communication point in time ($t_f$) is approximated from at least one time span (A) between at least two preceding communication points in time ($t_K$, $t'_K$) and a preceding communication point in time ($t"_K$).

4. Method as claimed in claim 1,
characterized in that
at least two time spans ($A_1$, $A_2$) are calculated between, in each case, at least two preceding communication points in time ($t_{K1}$, $t'_{K1}$, $t_{K2}$, $t'_{K2}$), an average value (M) is formed from the time spans ($A_1$, $A_2$), and the following communication point in time ($t_f$) is approximated starting from the average value (M) and a preceding communication point in time ($t"_K$).

5. Method as claimed in claim 1, 3 or 4
characterized in that
in the case where the time span ($A_b$) to the approximated communication point in time ($t_f$) is smaller than a smallest value (K),
the communication point in time ($t_f$) is approximated starting from this smallest value (K), wherein the smallest value (K) is determined from the minimum time span ($A_{min}$), which is possible between two measurements following one after the other, considering technical constraints.

6. Method as claimed in claim 1, 3 or 4,
characterized in that
in the case, where the time span ($A_b$) to the approximated communication point in time ($t_f$) is greater than a limit value (G),
the communication point in time ($t_f$) is approximated starting from the time span ($A'_b$), which was used for the approximation of the preceding approximated communication point in time ($t'_f$), wherein the limit value (G) represents a boundary between a time span between queries in a normal communication cycle and a time span in a disturbed communication cycle of the control unit (10).

7. Apparatus for performing the method of at least one of the claims 1 to 6,
characterized in that
at least one field bus communication unit (15) is provided, which, in the case of a query from the control unit (10), communicates at least one measured value, and at least one output/control unit (20) is provided, which controls the measuring point in time ($t_M$) of the field device, wherein the field bus communication unit (15) transmits at least the communication point in time ($t_K$) to the output/control unit (20).